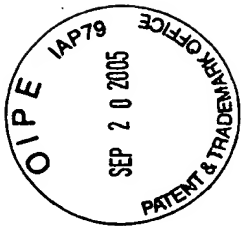


Figure 1A



BssHII HincII SpeI
1 GCGCGCGTTGACATTGATTATTGACTAGTTATTAATAGTAATCAATTACGGGGTCATTA
60 GTTCATAGCCCATATATGGAGTTCGCGTTACATAACTTACGGTAAATGGCCCGCCTGG
119 CTGACCGCCCAACGACCCCCGCCATTGACGTCAATAATGACGTATGTTCCCATAGTAA
178 CGCCAATAGGGACTTTCCATTGACGTCAATGGGTGGACTATTTACGGTAAACTGCCAC
NdeI
237 TTGGCAGTACATCAAGTGTATCATATGCCAAGTACGCCCCCTATTGACGTCAATGACGG
CMV promotor
296 TAAATGGCCCGCCTGGCATTATGCCAGTACATGACCTTATGGGACTTTCCTACTTGGC
SnaBI
355 AGTACATCTACGTATTAGTCATCGCTATTACCATGGTGATGCGGTTTTGGCAGTACATC
414 AATGGGCGTGGATAGCGGTTTGA CTACGGGGATTTC CAAGTCTCCACCCCATTGACGT
473 CAATGGGAGTTTGT TTTGGCACCAAATCAACGGGACTTTC CAAAATGTCGTAACAACT
SacI
532 CCGCCCCATTGACGCAAATGGGCGGTAGGCGTGTACGGTGGGAGGTCTATATAAGCAGA
T7-Promotor
591 GCTCTCTGGCTAACTAGAGAACCCACTGCTTACTGGCTTATCGAAATTAATACGACTCA
→
AgeI
HindIII KpnI
650 CTATAGGGAGACCCAAAGCTTGGTACCGGTGCGATGGCACCCCTGCATGCTGCTCCTGCTG
→ 1▶MetAlaProCysMetLeuLeuLeuLeu
SfiI NotI Apal EcoO109I
709 TTGGCGGGCGCCCTGGCCCCGACTCAGACCCGCGCGGGGGCCCAAAGGAGAAGACCCC
10▶LeuAlaAlaAlaLeuAlaProThrGlnThrArgAlaGlyAlaGlnLysGluLysThrPr
768 CGAGGAGCCCAAGGAGGAGGTGACCATCAAGGCCAACCTGATCTACGCCGACGGCAAGA
29▶oGluGluProLysGluGluValThrIleLysAlaAsnLeuIleTyrAlaAspGlyLysT
827 CCCAGACCGCCGAGTTCAAGGGCACCTTCGAGGAGGCCACCGCGGAGGCCTACCGCTAC
49▶hrGlnThrAlaGluPheLysGlyThrPheGluGluAlaThrAlaGluAlaTyrArgTyr
886 GCCGACGCCCTGAAGAAGGACAACGGCGAGTACACCGTGGACGTGGCCGACAAGGGCTA
69▶AlaAspAlaLeuLysLysAspAsnGlyGluTyrThrValAspValAlaAspLysGlyTy
945 CACCCTGAACATCAAGTTCGCCGGCAAGGAGAAGACCCCGAGGAGCCCAAGGAGGAGG
88▶rThrLeuAsnIleLysPheAlaGlyLysGluLysThrProGluGluProLysGluGluV

Figure 1 B(cont'd I)



1004 TGACCATCAAGGCCAACCTGATCTACGCCGACGGCAAGACCCAGACCGCCGAGTTCAAG
108▶ a l Thr l l e Lys A l a Asn Leu l l e Tyr A l a Asp G l y Lys Thr G l n Thr A l a G l u Phe Lys
1063 GGCACCTTCGAGGAGGCCACCGCGGAGGCCTACCGCTACGCCGACGCCCTGAAGAAGGA
128▶ G l y Thr Phe G l u G l u A l a Thr A l a G l u A l a Tyr A r g Tyr A l a Asp A l a Leu Lys Lys As
1122 CAACGGCGAGTACACCGTGGACGTGGCCGACAAGGGCTACACCCTGAACATCAAGTTTCG
147▶ p Asn G l y G l u Tyr Thr Val Asp Val A l a Asp Lys G l y Tyr Thr Leu Asn l l e Lys Phe A
1181 CCGGCAAGGAGAAGACCCCCGAGGAGCCCAAGGAGGAGGTGACCATCAAGGCCAACCTG
167▶ l a G l y Lys G l u Lys Thr Pro G l u G l u Pro Lys G l u G l u Val Thr l l e Lys A l a Asn Leu
1240 ATCTACGCCGACGGCAAGACCCAGACCGCCGAGTTCAAGGGCACCTTCGAGGAGGCCAC
187▶ l l e Tyr A l a Asp G l y Lys Thr G l n Thr A l a G l u Phe Lys G l y Thr Phe G l u G l u A l a Th
1299 CGCGGAGGCCTACCGCTACGCCGACGCCCTGAAGAAGGACAACGGCGAGTACACCGTGG
206▶ r A l a G l u A l a Tyr A r g Tyr A l a Asp A l a Leu Lys Lys Asp Asn G l y G l u Tyr Thr Val A
1358 ACGTGGCCGACAAGGGCTACACCCTGAACATCAAGTTCCGCCGCAAGGAGAAGACCCCC
226▶ s p Val A l a Asp Lys G l y Tyr Thr Leu Asn l l e Lys Phe A l a G l y Lys G l u Lys Thr Pro

1417 GAGGAGCCCCAAGGAGGAGGTGACCATCAAGGCCAACCTGATCTACGCCGACGGCAAGAC
246▶ G l u G l u Pro Lys G l u G l u Val Thr l l e Lys A l a Asn Leu l l e Tyr A l a Asp G l y Lys Th
1476 CCAGACCGCCGAGTTCAAGGGCACCTTCGAGGAGGCCACCGCGGAGGCCTACCGCTACG
265▶ r G l n Thr A l a G l u Phe Lys G l y Thr Phe G l u G l u A l a Thr A l a G l u A l a Tyr A r g Tyr A
1535 CCGACGCCCTGAAGAAGGACAACGGCGAGTACACCGTGGACGTGGCCGACAAGGGCTAC
285▶ l a Asp A l a Leu Lys Lys Asp Asn G l y G l u Tyr Thr Val Asp Val A l a Asp Lys G l y Tyr
SgrAI NotI
1594 ACCCTGAACATCAAGTTCCGCCGGCGCGCCGCGAGCAACAAAACTCATCTCAGAAGAGGA
305▶ Thr Leu Asn l l e Lys Phe A l a G l y A l a A l a A l a G l u G l n Lys Leu l l e Ser G l u G l u As

Sall
HincII
AclI
1653 TCTGAATGGGGCCGTCGACGGACAAAACGACACCAGCCAAACCAGCAGCCCCCTCAGCAT
324▶ p Leu Asn G l y A l a Val Asp G l y G l n Asn Asp Thr Ser G l n Thr Ser Ser Pro Ser A l a S

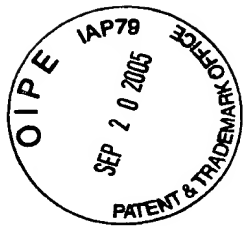
MscI
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344▶ er Ser Asn l l e Ser G l y G l y l l e Phe Leu Phe Phe Val A l a Asn A l a l l e l l e Hi s Leu

AflIII XbaI SacI
1771 TTCTGCTTCAGTTGAGGTGACACGTCTAGAGCTATTCTATAGTGTCACCTAAATGCTAG
364▶ Phe Cys Phe Ser •••

BclI
1830 AGCTCGCTGATCAGCCTCGACTGTGCCTTCTAGTTGCCAGCCATCTGTTGTTTGCCCT

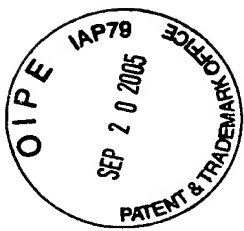
poly A
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1948 GAGGAAATTGCATCGCATTGTCTGAGTAGGTGTCATTCTATTCTGGGGGGTGGGGTGGG
2007 GCAGGACAGCAAGGGGGAGGATTGGGAAGACAATAGCAGGCATGCTGGGGATGCGGTGG
2066 GCTCTATGGCTTCTGAGGCGGAAAGAACCAGTGGCGGTAATACGGTTATCCACAGAATC
AflIII
2125 AGGGGATAACGCAGGAAAGACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTA
2184 AAAAGGCCCGCTTGTCTGGCGTTTTTTCATAGGCTCCGCCCCCTGACGAGCATCACAAA

Figure 1B (cont'd II)



2243 AATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTT
2302 TCCCCCTGGAAGCTCCCTCGTGGCTCTCCTGTTCCGACCCTGCCGCTTACCGGATACC
2361 TGTCCGCCTTTCTCCCTTCGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTAT
2420 CTCAGTTCGGTGTAGGTCGTTCCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCCGTTCA
Col E1
2479 GCCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACG
2538 ACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGC
2597 GGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGGACAGTATT
2656 TGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGAT
2715 CCGGCAAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTGTGTTGCAAGCAGCAGATTACG
2774 CGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCA
2833 GTGGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGAGATTATCAAAAAGGATCTTCA
2892 CCTAGATCCTTTTAAATTAATAATGAAGTTTTAAATCAATCTAAAGTATATATGAGTAA
EcoO109I
2951 CCTGAGGCTATGGCAGGGCCTGCCGCCCGACGTTGGCTGCGAGCCCTGGGCCTTCACC
3010 CGAAGTTGGGGGTGGGGTGGGGAAAAGGAAGAAACGCGGGCGTATTGGCCCCAATGGG
3069 GTCTCGGTGGGGTATCGACAGAGTGCCAGCCCTGGGACCGAACCCCGCGTTTATGAACA
TK poly A
3128 AACGACCCAACACCGTGCGTTTTATTCTGTCTTTTATTGCCGTCATAGCGCGGGTTCC
3187 TTCCGGTATTGTCTCCTTCCGTGTTTCAGTTAGCCTCCCCCTAGGGTGGGCGAAGAACT
3246 CCAGCATGAGATCCCCGCGCTGGAGGATCATCCAGCCGGCGTCCCGGAAAACGATTCCG
3305 AAGCCCAACCTTTCATAGAAGGCGGCGGTGGAATCGAAATCTCGTGATGGCAGGTTGGG
3364 CGTCGCTTGGTCGGTCATTTTGAACCCAGAGTCCCGCTCAGAAGAACTCGTCAAGAAG
2634 ●●●PhePheGluAspLeuLeu
3423 GCGATAGAAGGCGATGCGCTGCGAATCGGGAGCGGCGATACCGTAAAGCACGAGGAAGC
2564 ArgTyrPheAlaIleArgGlnSerAspProAlaAlaIleGlyTyrLeuValLeuPheAr
3482 GGTACGCCCATTCGCCGCCAAGCTCTTCAGCAATATCACGGGTAGCCAACGCTATGTCC
2364 gAspAlaTrpGluGlyLeuGluAlaIleAspArgThrAlaLeuAlaIleAspG
RsrII
3541 TGATAGCGGTCCGCCACACCCAGCCGCCACAGTCGATGAATCCAGAAAAGCGGCCATT
2164 InTyrArgAspAlaValGlyLeuArgGlyCysAspIlePheGlySerPheArgGlyAsn
3600 TTCCACCATGATATTCGGCAAGCAGGCATCGCCATGGGTACGACGAGATCCTCGCCGT
1974 GluValMetIleAsnProLeuCysAlaAspGlyHisThrValValLeuAspGluGlyAs
3659 CGGGCATGCTCGCCTTGAGCCTGGCGAACAGTTCGGCTGGCGCGAGCCCTGATGCTCT
1774 pProMetSerAlaLysLeuArgAlaPheLeuGluAlaProAlaLeuGlyGlnHisGluG
BclI

Figure 1B (cont'd III)



3718 TGATCATCCTGATCGACAAGACCGGCTTCCATCCGAGTACGTGCTCGCTCGATGCGATG
157↓ | nAspAspGlnAspValLeuGlyAlaGluMetArgThrArgAlaArgGluIleArgHis
3777 TTTGCTTGGTGGTGAATGGGAGGTAGCCGGATCAAGCGTATGCAGCCGCCGATTG
138↓ LysAlaGlnHisAspPheProCysThrAlaProAspLeuThrHisLeuArgArgMetAla
3836 CATCAGCCATGATGGATACTTTCTCGGCAGGAGCAAGGTGAGATGACAGGAGATCCTGC
118↓ aAspAlaMetIleSerValLysGluAlaProAlaLeuHisSerSerLeuLeuAspGlnG
Tth1111 Pvull
3895 CCCGGCACTTCGCCCAATAGCAGCCAGTCCCTTCCCGCTTCAGTGACAACGTCGAGCAC
98↓ | yProValGluGlyLeuLeuLeuTrpAspArgGlyAlaGluThrValValAspLeuVal
Neo-R.
FspI MscI
3954 AGCTGCGCAAGGAACGCCCCGTCGTGGCCAGCCACGATAGCCGCGCTGCCTCGTCTTGCA
79↓ | AlaAlaCysProValGlyThrThrAlaLeuTrpSerLeuArgAlaAlaGluAspGlnLe
NarI
4013 GTTCATTACAGGCACCGGACAGGTCTGCTTACAAAAAGAACGGCGCCCTGCGCT
59↓ | uGluAsnLeuAlaGlySerLeuAspThrLysValPheLeuValProArgGlyGlnAlaS
4072 GACAGCCGGAACACGGCGCATCAGAGCAGCCGATTGTCTGTTGTGCCAGTCATAGCC
39↓ | erLeuArgPheValAlaAlaAspSerCysGlyIleThrGlnGlnAlaTrpAspTyrGly
4131 GAATAGCCTCTCCACCCAAGCGCGCGGAGAACCTGCGTGCAATCCATCTTGTTCATCA
20↓ | PheLeuArgGluValTrpAlaAlaProSerGlyAlaHisLeuGlyAspGlnGluIleMe
BsaBI ClaI AvrII
4190 TGCGAAACGATCCTCATCCTGTCTCTTGATCGATCTTTGCAAAAGCCTAGGCCTCCAAA
0↓ t
4249 AAAGCCTCCTCACTACTTCTGGAATAGCTCAGAGGCCGAGGAGGCGGCCTCGGCCTCTG

4308 CATAAATAAAAAAATTAGTCAGCCATGGGGCGGAGAATGGGCGGAACCTGGGCGGAGTT

SV40 ori & Promotor NsiI
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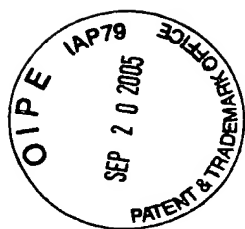
SexAI
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NsiI
4485 AATTGAGATGCATGCTTTGCATACTTCTGCCTGCTGGGGAGCCTGGGGACTTTCCACAC

PvuII Bsu36I
4544 CCTAACTGACACACATTCCACAGCTGGTTCTTTCCGCCTCAGGACTCTTCCTTTTTCAA

4603 TAAATCAATCTAAAGTATATATGAGTAACTTGGTCTGACAGTTACCAATGCTTAATCA
287↓ •••TrpHisLysIleLe
Eam1105I
4662 GTGAGGCACCTATCTCAGCGATCTGTCTATTTCTGTTTCATCCATAGTTGCCTGACTCCCC
281↓ | uSerAlaGlyIleGluAlaIleGlnArgAsnArgGluAspMetThrAlaGlnSerGlyT
4721 GTCGTGTAGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGAT
261↓ | hrThrTyrIleValValIleArgSerProLysGlyAspProGlyLeuAlaAlaIleIle
4780 ACCGCGAGACCCACGCTCACCGGCTCCAGATTTATCAGCAATAAACAGCCAGCCGGAA
242↓ | GlyArgSerGlyArgGluGlyAlaGlySerLysAspAlaIlePheTrpGlyAlaProLe
4839 GGGCCGAGCGCAGAAGTGGTCCTGCACTTTATCCGCCTCCATCCAGTCTATTAATTGT
222↓ | uAlaSerArgLeuLeuProGlyAlaValLysAspAlaGluMetTrpAspIleLeuGlnG
FspI Psp1406I
4898 TGCCGGGAAGCTAGAGTAAGTAGTTCGCCAGTTAATAGTTTGCGCAACGTTGTTGCCAT
202↓ | nArgSerAlaLeuThrLeuLeuGluGlyThrLeuLeuLysArgLeuThrThrAlaMet
4957 TGCTACAGGCATCGTGGTGTACGCTCGTCTTGGTATGGCTTCATTACGCTCCGGTT
183↓ | AlaValProMetThrThrAspArgGluAspAsnProIleAlaGluAsnLeuGluProGlu

Figure 1B (cont'd IV)



5016 CCCAACGATCAAGGCGAGTTACATGATCCCCCATGTTGTGCAAAAAAGCGGTTAGCTCC
1634 uTrpArgAspLeuArgThrValHisAspGlyMetAsnHisLeuPheAlaThrLeuGluL
PvuI

5075 TTCGGTCTCCGATCGTTGTCAGAAGTAAGTTGGCCGCAGTGTTATCACTCATGGTTAT
1434 ysProGlyGlyIleThrThrLeuLeuLeuAsnAlaAlaThrAsnAspSerMetThrIle
bla

5134 GGCAGCACTGCATAAFTCTCTTACTGTCATGCCATCCGTAAGATGCTTTTCTGTGACTG
1244 AlaAlaSerCysLeuGluArgValThrMetGlyAspThrLeuHisLysGluThrValPr
ScaI

5193 GTGAGTACTCAACCAAGTCATTCTGAGAATAGTGTATGCGGCGACCGAGTTGCTCTTGC
1044 oSerTyrGluValLeuAspAsnGlnSerTyrHisIleArgArgGlyLeuGlnGluGlnG
5252 CCGGCGTCAATACGGGATAATACCGCGCCACATAGCAGAACTTTAAAAGTGCTCATCAT
844 IyAlaAspIleArgSerLeuValAlaGlyCysLeuLeuValLysPheThrSerMetMet
Psp1406I

5311 TGGAAAAACGTTCTTCGGGGCGAAAACTCTCAAGGATCTTACCGCTGTTGAGATCCAGTT
654 ProPheArgGluGluProArgPheSerGluLeuIleLysGlySerAsnLeuAspLeuGlu
ApaLI

5370 CGATGTAAACCACTCGTGCACCCAACTGATCTTCAGCATCTTTTACTTTCACCAGCGTT
454 ulleTyrGlyValArgAlaGlyLeuGlnAspGluAlaAspLysValLysValLeuThrG
5429 TCTGGGTGAGCAAAAAACAGGAAGGCAAAATGCCGCAAAAAAGGGAATAAGGGCGACACG
254 IuProHisAlaPheValProLeuCysPheAlaAlaPhePheProIleLeuAlaValArg
SspI

5488 GAAATGTTGAATACTCATACTCTTCCTTTTCAATATTATTGAAGCATTTATCAGGGTT
64 PheHisGlnIleSerMet
BspHI

5547 ATTGTCCTCATGACGGGATACATATTTGAATGTATTTAGAAAAATAAACAAATAGGGGTT
5606 CCGCGCACATTTCCCCGAAAAGTGCCACCTGACCGCGCCCTGTAGCGGCGCATTAAAGCGC

Stem loop A

5665 GCGGGGTGTTGGTTACGCGCAGCGTGACCGCTACACTTGCCAGCGCCCTAGCGCCCC

5724 CTCCTTTCGCTTTCTTCCTTCTCTTCGCCACGTTGCGCGGCTTTCCCCGTCAAGCT

f1 IR

Stem loop B

5783 CTAAATCGGGGGCTCCCTTTAGGGTTCCGATTTAGTGCTTTACGGCACCTCGACCCCAA

DrallI

Stem loop C

Primer-RNA

5842 AAAACTTGATTAGGGTGATGGTTCACGTAGTGGGCCATCGCCCTGATAGACGGTTTTTC

Start Transcription

VS-Synthese Nicking site

Stem loop D

Stem loop E

5901 GCCCTTTGACGTTGGAGTCCACGTTCTTTAATAGTGGACTCTTGTTCCAAACTGGAACA

5960 ACACTCAACCCATCTCGGTCTATTCTTTTGATTATAAGGGATTTTGCCGATTTCGGC

ApoI

ApoI

SspI

6019 CTATTGGTTAAAAAATGAGCTGATTTAACAAAAATTTAACGCGAATTTTAACAAAATAT

6078 TAACGCTTACAATTTAC

Figure 1B (cont'd V)

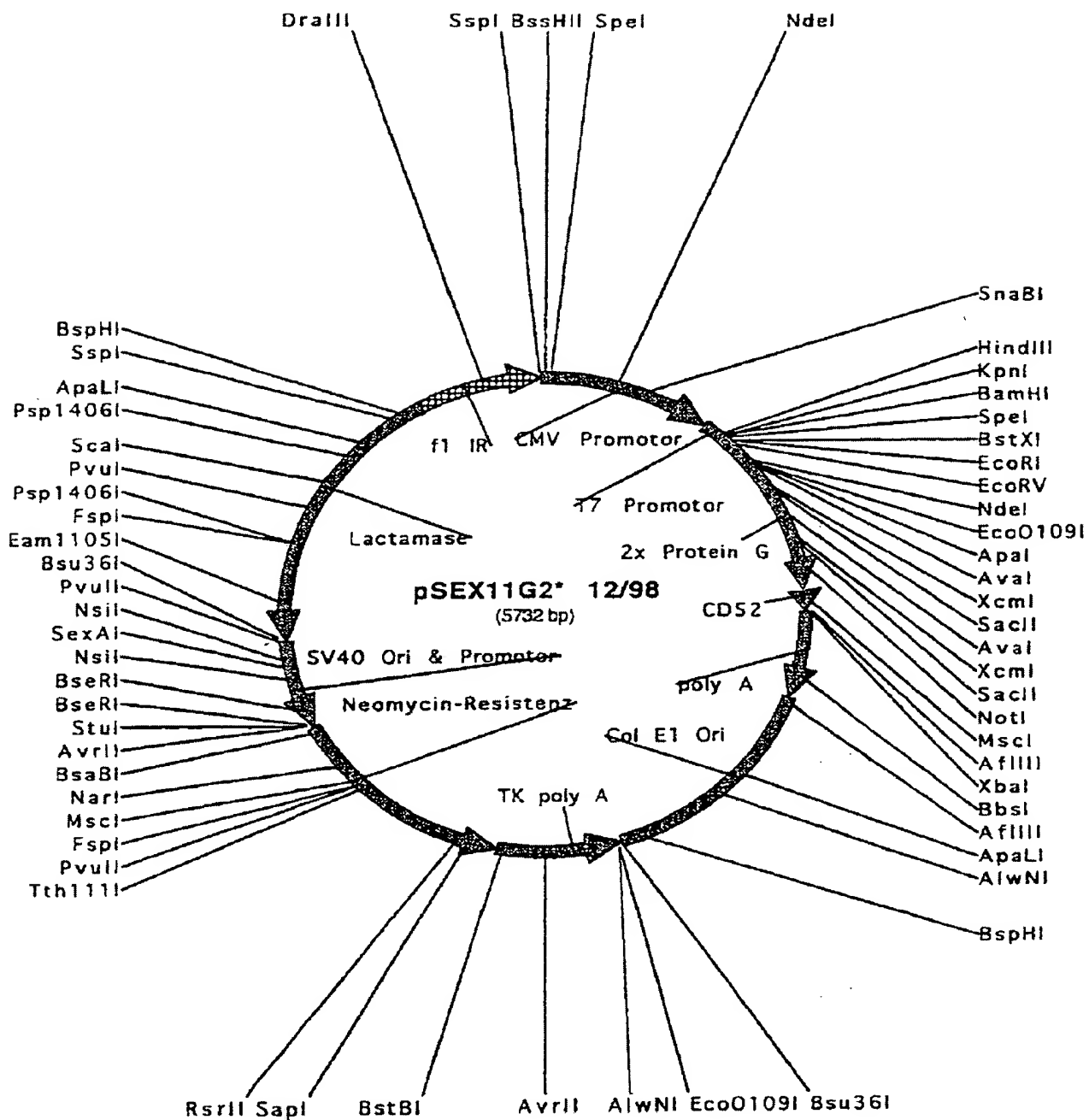


Figure 2 A

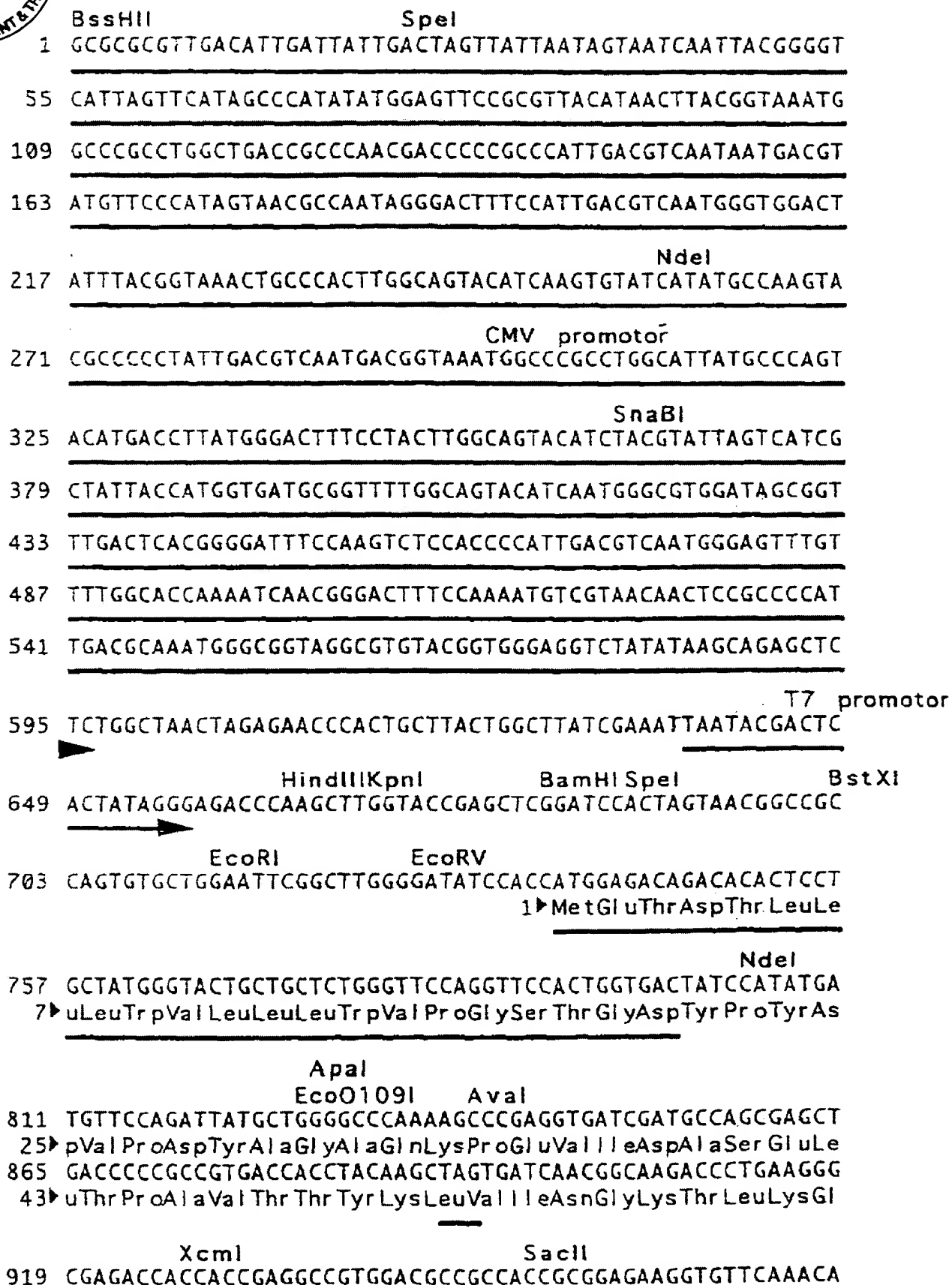
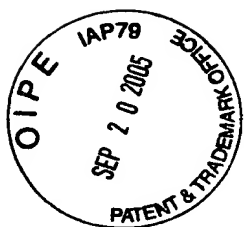
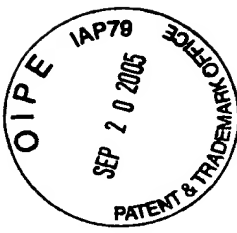


Figure 2B (cont'd I)



61 yGluThrThrThrGluAlaValAspAlaAlaThrAlaGluLysValPheLysGlu
973 ATACGCTAATGACAACGGGGTCGACGGCGAGTGGACTTACGACGACGCCACCAA
79 nTyrAlaAsnAspAsnGlyValAspGlyGluTrpThrTyrAspAspAlaThrLy
Aval
2x Protein G
1027 GACCTTCACCGTGACCGAGAAGCCCGAGGTGATCGATGCCAGCGAGCTGACCCC
97 sThrPheThrValThrGluLysProGluVallleAspAlaSerGluLeuThrPr
1081 CGCCGTGACCACCTACAAGCTAGTGATCAACGGCAAGACCCTGAAGGGCGAGAC
115 oAlaValThrThrTyrLysLeuVallleAsnGlyLysThrLeuLysGlyGluTh
XcmI SacII
1135 CACCACCGAGGCCGTGGACGCCGCCACCGGAGAAGGTGTTCAAACAATACGC
133 rThrThrGluAlaValAspAlaAlaThrAlaGluLysValPheLysGluTyrAl
1189 TAATGACAACGGGGTCGACGGCGAGTGGACTTACGACGACGCCACCAAGACCTT
151 aAsnAspAsnGlyValAspGlyGluTrpThrTyrAspAspAlaThrLysThrPh
NotI
1243 CACCGTGACCGAGGCGGCCGAGAACAAAACTCATCTCAGAAGAGGATCTGAA
169 eThrValThrGluAlaAlaAlaGluLysLeulleSerGluGluAspLeuAs
1297 TGGGGCCGTCGACGGACAAAACGACACCAGCCAAACCAGCAGCCCCCTCAGCATC
187 nGlyAlaValAspGlyGluAsnAspThrSerGluThrSerSerProSerAlaSe
CD52 MscI
1351 CAGCAACATAAGCGGAGGCATTTTCCTTTCTTCGTGGCCAATGCCATAATCCA
205 rSerAsnilleSerGlyGlyllePheLeuPhePheValAlaAsnAlallelleHi
AflIII XbaI
1405 CCTCTTCTGCTTCAGTTGAGGTGACACGTCTAGAGCTATTCTATAGTGTCACCT
223 sLeuPheCysPheSer...
1459 AAATGCTAGAGCTCGCTGATCAGCCTCGACTGTGCCTTCTAGTTGCCAGCCATC
1513 TGTTGTTTGGCCCTCCCCGTGCCTTCCTTGACCCTGGAAGGTGCCACTCCCAC
poly A
1567 TGTCCTTTCTAATAAAATGAGGAAATTGCATCGCATTGTCTGAGTAGGTGTCA
BbsI
1621 TTCTATTCTGGGGGGTGGGGTGGGGCAGGACAGCAAGGGGGAGGATTGGGAAGA
1675 CAATAGCAGGCATGCTGGGGATGCGGTGGGCTCTATGGCTTCTGAGGCGGAAAG
1729 AACCAGTGGCGGTAATACGGTTATCCACAGAATCAGGGGATAACGCAGGAAAGA
AflIII
1783 ACATGTGAGCAAAAAGGCCAGCAAAAAGGCCAGGAACCGTAAAAAGGCCCGCTTGC
1837 TGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAATCGACGCT
1891 CAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCC

Figure 2B (cont'd II)



1945 CTGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGACCCTGCCGCTTACCGGATACC
1999 TGTCCGCCCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTA

2053 GGTATCTCAGTTCGGTGTAGGTCGTTGCTCCAAGCTGGGCTGTGTGCACGAAC
ApaLI

2107 CCCCCGTTTCAGCCCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCA
Col E1

2161 ACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTA
AlwNI

2215 GCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACT

2269 ACGGCTACACTAGAAGGACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTA

2323 CCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTA

2377 GCGGTGGTTTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTC

2431 AAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGGAAACGAAAAC

2485 CACGTTAAGGGATTTTGGTCATGAGATTATCAAAAAGGATCTTCACCTAGATCC
BspHI

2539 TTTTAAATTAATAATGAAGTTTTAAATCAATCTAAAGTATATATGAGTAACCTG
EcoO109I

2593 AGGCTATGGCAGGGCCTGCCGCCCCGACGTTGGCTGCGAGCCCTGGGCCTTCAC
AlwNI

2647 CCGAACTTGGGGGGTGGGGTGGGGAAAAGGAAGAAACGCGGGCGTATTGGCCCC

2701 AATGGGGTCTCGGTGGGGTATCGACAGAGTGCCAGCCCTGGGACCGAACCCCGC

2755 GTTTATGAACAAACGACCCAACACCGTGCGTTTTATTCTGTCTTTTTATTGCCG
TK poly A

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2863 CCCTAGGGTGGGCGAAGAACTCCAGCATGAGATCCCCGCGCTGGAGGATCATCC
AvrII

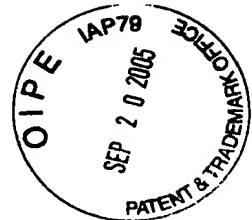
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BstBI

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3025 ACCCCAGAGTCCCGCTCAGAAGAACTCGTCAAGAAGGCGATAGAAGGCGATGCG

3079 CTGCGAATCGGGAGCGGCGATACCGTAAAGCACGAGGAAGCGGTGAGCCCATTC
2504 Gl nSer AspPr oAl aAl a l l eGly Tyr LeuVal LeuPheArg AspAl aTrpGl u
SapI

2504 Gl nSer AspPr oAl aAl a l l eGly Tyr LeuVal LeuPheArg AspAl aTrpGl u
RsrII

Figure 2B (cont'd III)



3133 GCCGCCAAGCTCTTCAGCAATATCACGGGTAGCCAACGCTATGTCCTGATAGCG
 2324 GlyGlyLeuGluGluAlaIleAspArgThrAlaLeuAlaIleAspGlnTyrArg
 3187 GTCCGCCACACCCAGCCGGCCACAGTCGATGAATCCAGAAAAGCGGCCATTTTC
 2144 AspAlaValGlyLeuArgGlyCysAspIlePheGlySerPheArgGlyAsnGlu
 3241 CACCATGATATTCGGCAAGCAGGCATCGCCATGGGTACGACGAGATCCTCGCC
 1964 ValMetIleAsnProLeuCysAlaAspGlyHisThrValValLeuAspGluGly
 3295 GTCGGGCATGCTCGCCTTGAGCCTGGCGAACAGTTCGGCTGGCGCGAGCCCTG
 1784 AspProMetSerAlaLysLeuArgAlaPheLeuGluAlaProAlaLeuGlyGln
 3349 ATGCTCTTGATCATCCTGATCGACAAGACCGGCTTCCATCCGAGTACGTGCTCG
 1604 HisGluGlnAspAspGlnAspValLeuGlyAlaGluMetArgThrArgAlaArg
 3403 CTCGATGCGATGTTTCGCTTGGTGGTGAATGGGCAGGTAGCCGGATCAAGCGT
 1424 GluIleArgHisLysAlaGlnHisAspPheProCysThrAlaProAspLeuThr
 3457 ATGCAGCCGCCGATTGCATCAGCCATGATGGATACTTTCTCGGCAGGAGCAAG
 1244 HisLeuArgArgMetAlaAspAlaMetIleSerValLysGluAlaProAlaLeu
 3511 GTGAGATGACAGGAGATCCTGCCCCGGCACTTCGCCCAATAGCAGCCAGTCCCT
 1064 HisSerSerLeuLeuAspGlnGlyProValGluGlyLeuLeuLeuTrpAspArg

FspI

Neo-R.

Tth1111

PvuII

MscI

3565 TCCCGCTTCAGTGACAACGTGAGCACAGCTGCGCAAGGAACGCCCGTCGTGGC
 884 GlyAlaGluThrValValAspLeuValAlaAlaCysProValGlyThrThrAla
 3619 CAGCCACGATAGCCGCGCTGCCTCGTCTTGCAAGTTCATTACAGGGCACCGGACAG
 704 LeuTrpSerLeuArgAlaAlaGluAspGlnLeuGluAsnLeuAlaGlySerLeu

NarI

3673 GTCGGTCTTGACAAAAAGAACCGGGCGCCCTGCGCTGACAGCCGGAACACGGC
 524 AspThrLysValPheLeuValProArgGlyGlnAlaSerLeuArgPheValAla
 3727 GGCATCAGAGCAGCCGATTGTCTGTTGTGCCAGTCATAGCCGAATAGCCTCTC
 344 AlaAspSerCysGlyIleThrGlnGlnAlaTrpAspTyrGlyPheLeuArgGlu
 3781 CACCCAAGCGGCCGGAGAACCCTGCGTGCAATCCATCTTGTTCATCATGCGAAA
 164 ValTrpAlaAlaProSerGlyAlaHisLeuGlyAspGlnGluIleMet

StuI

BsaBI

AvrII

3835 CGATCCTCATCCTGTCTCTTGATCGATCTTTGCAAAAGCCTAGGCCTCCAAAAA

BseRI

BseRI

3889 AGCCTCCTCACTACTTCTGGAATAGCTCAGAGGCCGAGGAGGCGGCCTCGGCCT

3943 CTGCATAAATAAAAAAATTAGTCAGCCATGGGGCGGAGAAATGGGCGGAACTGG

SV40 ori & Promotor

3997 GCGGAGTTAGGGGCGGGATGGGCGGAGTTAGGGGCGGGACTATGGTTGCTGACT

NsiI

4051 AATTGAGATGCATGCTTTGCATACTTCTGCCTGCTGGGGAGCCTGGGGACTTTC

SexAI

NsiI

4105 CACACCTGGTTGCTGACTAATTGAGATGCATGCTTTGCATACTTCTGCCTGCTG

PvuII

4159 GGGAGCCTGGGGACTTTCCACACCCTAACTGACACACATTCCACAGCTGGTTCT

Bsu36I

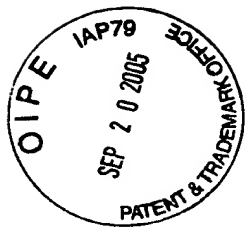
4213 TTCCGCCTCAGGACTCTTCCTTTTTCAATAAATCAATCTAAAGTATATATGAGT

4267 AAACCTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCTCAGCGA

2874 •••TrpHisLysIleLeuSerAlaGlyIleGluAlaIle

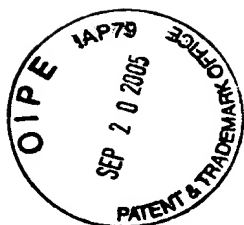
Eam1105I

Figure 2B (cont'd IV)



4321 TCTGTCTATTTTCGTTTCATCCATAGTTGCCTGACTCCCCGTCGTGTAGATAACTA
274 eGlnArgAsnArgGluAspMetThrAlaGlnSerGlyThrThrTyrIleValVa
4375 CGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGAGACC
256 lllleArgSerProLysGlyAspProGlyLeuAlaAlallelleGlyArgSerGl
4429 CACGCTCACCGGCTCCAGATTATCAGCAATAAACAGCCAGCCGGAAGGGCCG
238 yArgGluGlyAlaGlySerLysAspAlallePheTrpGlyAlaProLeuAlaSe
4483 AGCGCAGAAGTGGTCTGCAACTTTATCCGCCTCCATCCAGTCTATTAATTGTT
220 rArgLeuLeuProGlyAlaValLysAspAlaGluMetTrpAspilleLeuGlnGl
FspI Psp1406I
4537 GCCGGGAAGCTAGAGTAAGTAGTTCGCCAGTTAATAGTTTGCGCAACGTTGTTG
202 nArgSerAlaLeuThrLeuLeuGluGlyThrLeuLeuLysArgLeuThrThrAl
4591 CCATTGCTACAGGCATCGTGGTGTACGCTCGTCGTTTGGTATGGCTTCATTCA
184 aMetAlaValProMetThrThrAspArgGluAspAsnProilleAlaGluAsnLe
4645 GCTCCGGTTCCCAACGATCAAGGCGAGTTACATGATCCCCCATGTTGTGCAAAA
166 uGluProGluTrpArgAspLeuArgThrValHisAspGlyMetAsnHisLeuPh
PvuI
4699 AAGCGGTTAGCTCCTTCGGTCTCCGATCGTTGTCAGAAGTAAGTTGGCCGCAG
148 eAlaThrLeuGluLysProGlyGlyilleThrThrLeuLeuLeuAsnAlaAlaTh
4753 TGTTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTCATGCCAT
130 rAsnAspSerMetThrilleAlaAlaSerCysLeuGluArgValThrMetGlyAs
bla Scal
4807 CCGTAAGATGCTTTTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTGAGAAT
112 pThrLeuHisLysGluThrValProSerTyrGluValLeuAspAsnGlnSerTy
4861 AGTGTATGCGGCGACCGAGTTGCTCTTGCCCGGCGTCAATACGGGATAATACCG
94 rHisilleArgArgGlyLeuGlnGluGlnGlyAlaAspilleArgSerLeuValAl
Psp1406I
4915 CGCCACATAGCAGAACTTTAAAAGTGCTCATCATTGGAAAACGTTCTTCGGGGC
76 aGlyCysLeuLeuValLysPheThrSerMetMetProPheArgGluGluProAr
4969 GAAAACTCTCAAGGATCTTACCGCTGTTGAGATCCAGTTCGATGTAACCCACTC
58 gPheSerGluLeuilleLysGlySerAsnLeuAspLeuGluilleTyrGlyValAr
ApaI
5023 GTGCACCAACTGATCTTCAGCATCTTTTACTTTTACCAGCGTTTCTGGGTGAG
40 gAlaGlyLeuGlnAspGluAlaAspLysValLysValLeuThrGluProHisAl
5077 CAAAAACAGGAAGGCAAAATGCCGCAAAAAAGGGAATAAGGGCGACACGGAAAT
22 aPheValProLeuCysPheAlaAlaPhePheProilleLeuAlaValArgPheHi
SspI
5131 GTTGAATACTCATACTCTTCCTTTTTCAATATTATTGAAGCATTATCAGGGTT
4 sGlnilleSerMet
BspHI
5185 ATTGTCTCATGAGCGGATACATATTTGAATGTATTTAGAAAAATAAACAAATAG
5239 GGGTTCCGCGCACATTTCCCCGAAAAGTGCCACCTGACGCGCCCTGTAGCGGCG
Stem loop A
5293 CATTAAGCGCGGCGGGTGTGGTGGTTACGCGCAGCGTGACCGCTACACTTGCCA
5347 GCGCCCTAGCGCCCGCTCCTTTGCTTTCTTCCCTTCCTTTCTCGCCACGTTCTG
f1 IR Stem loop B
5401 CCGGCTTTCCCCGTCAAGCTCTAAATCGGGGGCTCCCTTTAGGGTTCCGATTTA

Figure 2B (cont'd V)



5455 GTGCTTTACGGCACCTCGACCCCAAAAACTTGATTAGGGTGATGGTTCACGTA DraIII

5509 GTGGGCCATCGCCCTGATAGACGGTTTTTCGCCCTTTGACGTTGGAGTCCACGT Start Transcription
VS-Synthese

Stem loop C Primer-RNA

5563 TCTTTAATAGTGGACTCTTGTTCCAACTGGAACAACACTCAACCCTATCTCGG

Nicking site Stem loop D Stem loop E

5617 TCTATTCTTTTGATTTATAAGGGATTTTGCCGATTCGGCCTATTGGTTAAAAA

5671 ATGAGCTGATTTAACAAAAATTTAACGCGAATTTTAACAAAATATTAACGCTTA SspI

5725 CAATTTAC

Figure 2B (cont'd VI)

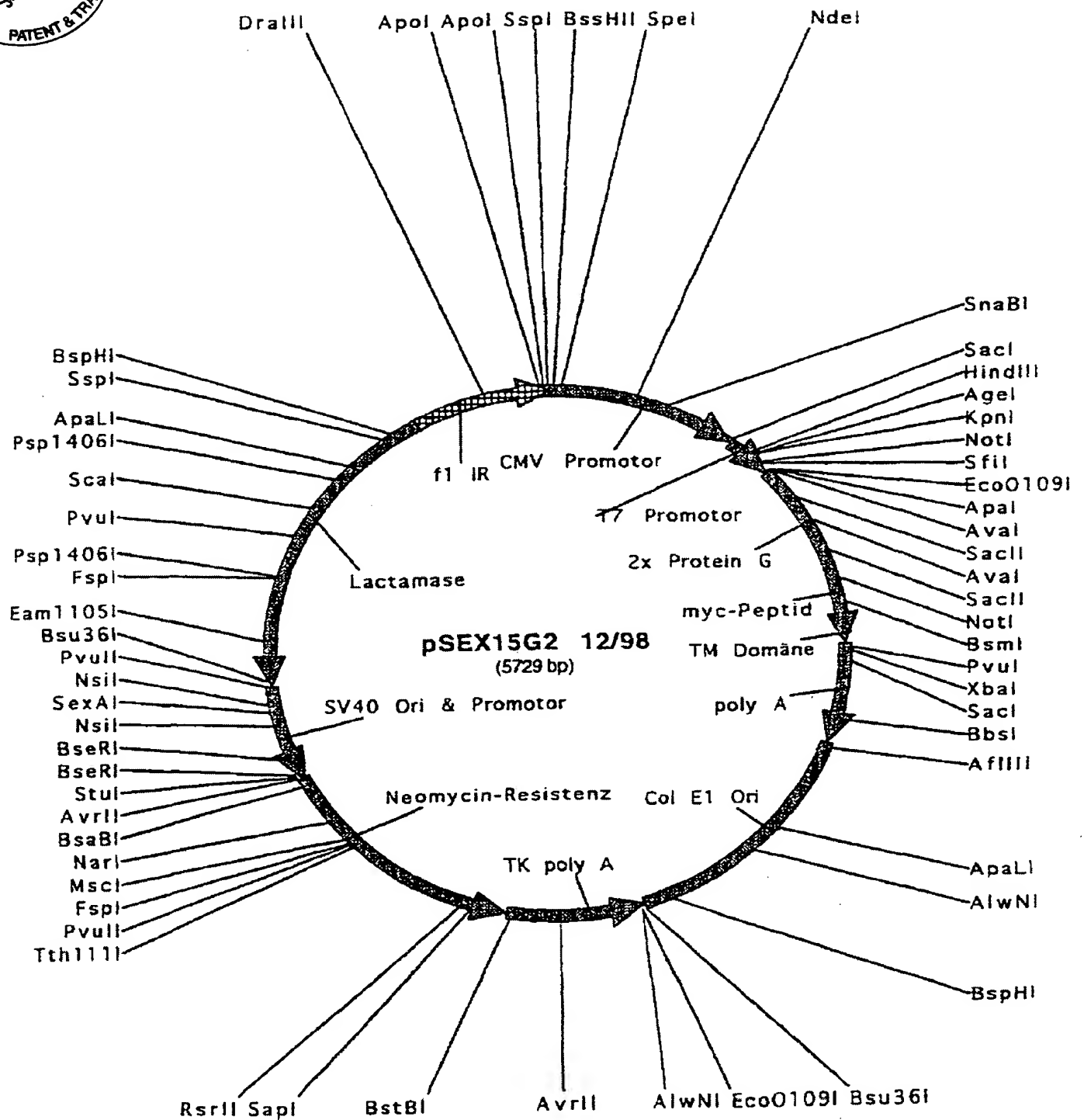


Figure 3 A

BssHII

1 GCGCGCGTTGACATTGATTATTGACTAGTTATTAATAGTAATCAATTACGGGGTCA

SpeI

57 TTAGTTCATAGCCCATATATGGAGTTCGCGGTACATAACTTACGGTAAATGGCCC

113 GCCTGGCTGACCGCCCCAACGACCCCCGCCATTGACGTCAATAATGACGTATGTTCC

169 CCATAGTAACGCCAATAGGGACTTTCCATTGACGTCAATGGGTGGACTATTTACGG

NdeI

225 TAAACTGCCCACTTGGCAGTACATCAAGTGTATCATATGCCAAGTACGCCCCCTAT

CMV promoter

281 TGACGTCAATGACGGTAAATGGCCCGCCTGGCATTATGCCCAGTACATGACCTTAT

SnaBI

337 GGGACTTTCCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCATGGTG

393 ATGCGGTTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATT

449 TCCAAGTCTCCACCCCATTGACGTCAATGGGAGTTTGTTTTGGCACCAAATCAAC

505 GGGACTTTCCAAATGTGTAACAACCTCCGCCCCATTGACGCAAATGGGCGGTAGG

SacI

561 CGTGTACGGTGGGAGGTCTATATAAGCAGAGCTCTCTGGCTAACTAGAGAACCAC

T7 promotor

617 TGCTTACTGGCTTATCGAAATTAATACGACTCACTATAGGGAGACCCCAAGCTTGGT

HindIII KpnI

SfiI

AgeI

673 ACCGGTGGCGATGGCACCCCTGCATGCTGCTCCTGCTGTTGGCGGCCGCTGGCCCC

1▶ MetAlaProCysMetLeuLeuLeuLeuAlaAlaAlaLeuAlaPro

ApaI

EcoO109I

AvaI

729 GACTCAGACCCGCGCGGGGGCCCCAAAAGCCCCGAGGTGATCGATGCCAGCGAGCTGA

16▶ oThrGlnThrArgAlaGlyAlaGlnLysProGluValIleAspAlaSerGluLeuT

785 CCCCCGCCGTGACCACCTACAAGCTAGTGATCAACGGCAAGACCCTGAAGGGCGAG

35▶ hrProAlaValThrThrTyrLysLeuValIleAsnGlyLysThrLeuLysGlyGlu

SacII

841 ACCACCACCGAGGCCGTGGACGCCGCCACCGCGGAGAAGGTGTTCAAACAATACGC

54▶ ThrThrThrGluAlaValAspAlaAlaThrAlaGluLysValPheLysGlnTyrAl

897 TAATGACAACGGGGTCGACGGCGAGTGGACTTACGACGACGCCACCAAGACCTTCA

72▶ aAsnAspAsnGlyValAspGlyGluTrpThrTyrAspAspAlaThrLysThrPheT

Aval

2x Protein G

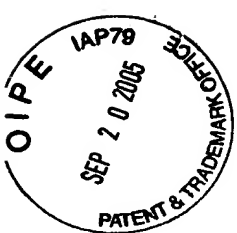
953 CCGTGACCGAGAAGCCCCGAGGTGATCGATGCCAGCGAGCTGACCCCCGCCGTGACC

91▶ hrValThrGluLysProGluValIleAspAlaSerGluLeuThrProAlaValThr

1009 ACCTACAAGCTAGTGATCAACGGCAAGACCCTGAAGGGCGAGACCACCACCGAGGC

110▶ ThrTyrLysLeuValIleAsnGlyLysThrLeuLysGlyGluThrThrThrGluAl

Figure 3B (cont'd I)



SacII

1065 CGTGGACGCCGCCACCGCGGAGAAGGTGTTCAAACAATACGCTAATGACAACGGGG
128▶ aValAspAlaAlaThrAlaGluLysValPheLysGlnTyrAlaAsnAspAsnGlyV
NotI

1121 TCGACGGCGAGTGGACTTACGACGACGCCACCAAGACCTTCACCGTGACCGAGGCG
147▶ alAspGlyGluTrpThrTyrAspAspAlaThrLysThrPheThrValThrGluAla
myc

1177 GCCGCAGAACAAAACTCATCTCAGAAGAGGATCTGAATGGGGCCGTGACGAACA
166▶ AlaAlaGluGlnLysLeuIleSerGluGluAspLeuAsnGlyAlaValAspGluGlu
BsmI

1233 AAAACTCATCTCAGAAGAGGATCTGAATGCTGTGGGCCAGGACACGCAGGAGGTCA
184▶ nLysLeuIleSerGluGluAspLeuAsnAlaValGlyGlnAspThrGlnGluValIle
1289 TCGTGGTGGCACACTCCTTGCCCTTTAAGGTGGTGGTGATCTCAGCCATCCTGGCC
203▶ leValValProHisSerLeuProPheLysValValValIleSerAlaIleLeuAla
TM domain

1345 CTGGTGGTGCTCACCATCATCTCCCTTATCATCCTCATCATGCTTTGGCAGAAGAA
222▶ LeuValValLeuThrIleIleSerLeuIleIleLeuIleMetLeuTrpGlnLysLys
PvuI XbaI

1401 GCCACGTTCTGTCGGCCGATCGAGAATCCATCTAGAGCTATTCTATAGTGTCACCTA
240▶ sProArgSerSerAlaAspArgGluSerIle... — ←

SacI

1457 AATGCTAGAGCTCGCTGATCAGCCTCGACTGTGCCTTCTAGTTGCCAGCCATCTGT
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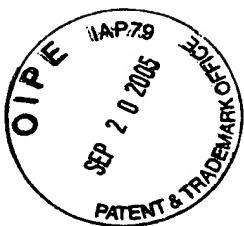
poly A

1513 TGTTTGCCCCCTCCCCCGTGCCTTCCTTGACCCTGGAAGGTGCCACTCCCACTGTCC
1569 TTTCCTAATAAAATGAGGAAATTGCATCGCATTGTCTGAGTAGGTGTCATTCTATT
BbsI

1625 CTGGGGGGTGGGGTGGGGCAGGACAGCAAGGGGGAGGATTGGGAAGACAATAGCAG
1681 GCATGCTGGGGATGCGGTGGGCTCTATGGCTTCTGAGGCGGAAAGAACCAGTGGCG
AflIII

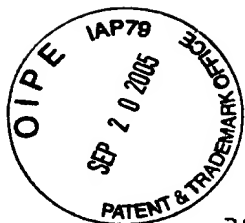
1737 GTAATACGGTTATCCACAGAATCAGGGGATAACGCAGGAAAGAACATGTGAGCAAA
1793 AGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTCCATA
1849 GGCTCCGCCCCCTGACGAGCATCAGAAAAATCGACGCTCAAGTCAGAGGTGGCGA
1905 AACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCG
1961 CTCTCCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCCGCCTTTCTCCCTTCGG

Figure 3B (cont'd II)



2017 GAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTC
2073 GTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTACGCCGACCGCTGCGC
2129 CTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCAC
2185 TGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACA
2241 GAGTTCCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGGACAGTATTTGGTAT
2297 CTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCG
2353 GCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGCAAGCAGCAGATTACG
2409 CGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGC
2465 TCAGTGGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGAGATTATCAAAAAGGA
2521 TCTTCACCTAGATCCTTTTAAATTAATAATGAAGTTTTAAATCAATCTAAAGTATA
2577 TATGAGTAACCTGAGGCTATGGCAGGGCCTGCCGCCCGACGTTGGCTGCGAGCCC
2633 TGGGCCTTCACCCGAACCTTGGGGGTGGGGTGGGGAAAAGGAAGAAACGCGGGCGT
2689 ATTGGCCCCAATGGGGTCTCGGTGGGGTATCGACAGAGTGCCAGCCCTGGGACCGA
2745 ACCCCGCGTTTATGAACAAACGACCCAACACCGTGCGTTTTATTCTGTCTTTTTAT
2801 TGCCGTCATAGCGCGGGTTCCTTCCGGTATTGTCTCCTTCCGTGTTTCAGTTAGCC
2857 TCCCCCTAGGGTGGGCGAAGAACTCCAGCATGAGATCCCCGEGCTGGAGGATCATC
2913 CAGCCGGCGTCCCGGAAAACGATTCCGAAGCCCAACCTTTCATAGAAGGCGGCGGT
2969 GGAATCGAAATCTCGTGATGGCAGGTTGGGCGTCGCTTGGTCGGTCATTTTGAACC
3025 CCAGAGTCCCGCTCAGAAGAACTCGTCAAGAAGGCGATAGAAGGCGATGCGCTGCG
2634 ●●●PhePheGluAspLeuLeuArgTyrPheAlaIleArgGlnSer
3081 AATCGGGAGCGGCGATACCGTAAAGCACGAGGAAGCGGTACGCCCATTCGCCGCCA
2484 rAspProAlaAlaIleGlyTyrLeuValLeuPheArgAspAlaTrpGluGlyGlyL
3137 AGCTCTTCAGCAATATCACGGGTAGCCAACGCTATGTCCTGATAGCGGTCCGCCAC
2294 euGluGluAlaIleAspArgThrAlaLeuAlaIleAspGlnTyrArgAspAlaVal
3193 ACCCAGCCGGCCACAGTCGATGAATCCAGAAAAGCGGCCATTTCCACCATGATAT
2114 GlyLeuArgGlyCysAspIlePheGlySerPheArgGlyAsnGluValMetIleAs
3249 TCGGCAAGCAGGCATCGCCATGGGTACGACGAGATCCTCGCCGTCGGGCATGCTC
1924 nProLeuCysAlaAspGlyHisThrValValLeuAspGluGlyAspProMetSerA
3305 GCCTTGAGCCTGGCGAACAGTTCGGCTGGCGCGAGCCCCTGATGCTCTTGATCATC
1734 lalaLysLeuArgAlaPheLeuGluAlaProAlaLeuGlyGlnHisGluGluAspAsp

Figure 3B (cont'd III)



3921 BseRI
GAGGAGGCGGCCTCGGCCTCTGCATAAATAAAAAAATTAGTCAGCCATGGGGCGG

3977 SV40 ori & Promotor
AGAATGGGCGGAACTGGGCGGAGTTAGGGGCGGGATGGGCGGAGTTAGGGGCGGGA

4033 NsiI
CTATGGTTGCTGACTAATTGAGATGCATGCTTTGCATACTTCTGCCTGCTGGGGAG

4089 SexAI NsiI
CCTGGGGACTTTCCACACCTGGTTGCTGACTAATTGAGATGCATGCTTTGCATACT

4145 Pvull
TCTGCCTGCTGGGGAGCCTGGGGACTTTCCACACCCTAACTGACACACATTCCACA

4201 Bsu36I
GCTGGTTCTTTCCGCCTCAGGACTCTTCCTTTTCAATAAAICAATCTAAAGTATA
4257 TATGAGTAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCTC
2874 ●●●TrpHisLysIleLeuSerAlaGlyIleGlu

3361 Eam110SI
CTGATCGACAAGACCGGCTTCCATCCGAGTACGTGCTCGCTCGATGCGATGTTTCG
1554 Gl nAspValLeuGlyAlaGluMetArgThrArgAlaArgGluIleArgHisLysAl
3417 CTTGGTGGTGAATGGGCGGAGTACCGGATCAAGCGTATGCAGCCGCCGATTGCA
1364 aGlnHisAspPheProCysThrAlaProAspLeuThrHisLeuArgArgMetAlaA
3473 TCAGCCATGATGGATACTTTCTCGGCAGGAGCAAGGTGAGATGACAGGAGATCCTG
1174 spAlaMetIleSerValLysGluAlaProAlaLeuHisSerSerLeuLeuAspGln

3529 Tth111I
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994 GlyProValGluGlyLeuLeuLeuTrpAspArgGlyAlaGluThrValValAspLe

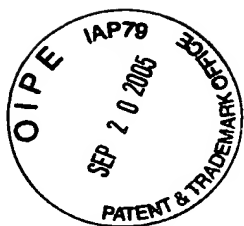
Neo-R.
PvullFspI MscI
3585 GCACAGCTGCGCAAGGAACGCCCGTCGTGGCCAGCCACGATAGCCGCGCTGCCTCG
804 uValAlaAlaCysProValGlyThrThrAlaLeuTrpSerLeuArgAlaAlaGluA

NarI
3641 TCTTGCAGTTCATTACAGGGCACCGGACAGGTGCGTCTTGACAAAAGAACCGGGCG
614 spGlnLeuGluAsnLeuAlaGlySerLeuAspThrLysValPheLeuValProArg
3697 CCCCTGCGCTGACAGCCGGAACACGGCGGCATCAGAGCAGCCGATTGTCTGTTGTG
434 GlyGlnAlaSerLeuArgPheValAlaAlaAspSerCysGlyIleThrGlnGlnAl
3753 CCCAGTCATAGCCGAATAGCCTCTCCACCCAAGCGGCCGAGAACCTGCGTGCAAT
244 aTrpAspTyrGlyPheLeuArgGluValTrpAlaAlaProSerGlyAlaHisLeuG

BsaBI
3809 CCATCTTGTTCAATCATGCGAAACGATCCTCATCCTGTCTCTTGATCGATCTTTGC
54 IyAspGlnGluIleMet

StuI
AvrII BseRI
3865 AAAAGCCTAGGCCTCCAAAAAAGCCTCCTCACTACTTCTGGAATAGCTCAGAGGCC

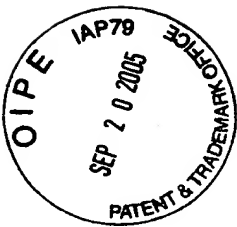
Figure 3B (cont'd IV)



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2764AlaIleGlnArgAsnArgGluAspMetThrAlaGlnSerGlyThrThrTyrIleVa
4369 CTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGAGAC
2574IValIleArgSerProLysGlyAspProGlyLeuAlaAlaIleIleGlyArgSerG
4425 CCACGCTCACCGGCTCCAGATTTATCAGCAATAAACAGCCAGCCGGAAGGGCCGA
2384IyArgGluGlyAlaGlySerLysAspAlaIlePheTrpGlyAlaProLeuAlaSer
4481 GCGCAGAAGTGGTCTGCAACTTTATCCGCCTCCATCCAGTCTATTAATTGTTGCC
2204ArgLeuLeuProGlyAlaValLysAspAlaGluMetTrpAspIleLeuGlnGlnAr
FspI Psp1406I
4537 GGGAAAGCTAGAGTAAGTAGTTCGCCAGTTAATAGTTTGCGCAACGTTGTTGCCATT
2014gSerAlaLeuThrLeuLeuGluGlyThrLeuLeuLysArgLeuThrThrAlaMetA
4593 GCTACAGGCATCGTGGTGTACGCTCGTCTTTGGTATGGCTTCATTCCAGTCCGG
1824IaValProMetThrThrAspArgGluAspAsnProIleAlaGluAsnLeuGluPro
4649 TTCCCAACGATCAAGGCGAGTTACATGATCCCCCATGTTGTGCAAAAAAGCGGTTA
1644GluTrpArgAspLeuArgThrValHisAspGlyMetAsnHisLeuPheAlaThrLe
PvuI
4705 GCTCCTTCGGTCCTCCGATCGTTGTCAGAAGTAAGTTGGCCGCAGTGTTATCACTC
1454uGluLysProGlyGlyIleThrThrLeuLeuLeuAsnAlaAlaThrAsnAspSerM
bla
4761 ATGGTTATGGCAGCACTGCATAATTCTCTTACTGTCATGCCATCCGTAAGATGCTT
1264etThrIleAlaAlaSerCysLeuGluArgValThrMetGlyAspThrLeuHisLys
ScaI
4817 TTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTGAGAATAGTGTATGCGGCGAC
1084GluThrValProSerTyrGluValLeuAspAsnGlnSerTyrHisIleArgArgGlu
4873 CGAGTTGCTCTTGGCCGGCGTCAATACGGGATAATACCGCGCCACATAGCAGAACT
894yLeuGlnGluGlnGlyAlaAspIleArgSerLeuValAlaGlyCysLeuLeuValL
Psp1406I
4929 TTAAAAGTGCTCATCATTGGAAAACGTTCTTTCGGGGCGAAAACTCTCAAGGATCTT
704ysPheThrSerMetMetProPheArgGluGluProArgPheSerGluLeuIleLys
ApaLI
4985 ACCGCTGTTGAGATCCAGTTCGATGTAACCCACTCGTGCAACCCAACTGATCTTCAG
524GlySerAsnLeuAspLeuGluIleTyrGlyValArgAlaGlyLeuGlnAspGluAl
5041 CATCTTTTACTTTTACCAGCGTTTCTGGGTGAGCAAAAAACAGGAAGGCAAAATGCC
334aAspLysValLysValLeuThrGluProHisAlaPheValProLeuCysPheAlaA
5097 GCAAAAAAGGGAATAAGGGCGACACGGAAATGTTGAATACTCATACTCTTCCTTTT
144IaPhePheProIleLeuAlaValArgPheHisGlnIleSerMet
SspI BspHI
5153 TCAATATTATTGAAGCATTATCAGGGTTATTGTCTCATGAGCGGATACATATTTG
5209 AATGTATTTAGAAAAATAAACAAATAGGGGTTCCGCGCACATTTCCCCGAAAAGTG
5265 CCACCTGACGCGCCCTGTAGCGGCGCATTAAGCGCGGCGGGTGTGGTGGTTACGCG

Stem loop A
5321 CAGCGTGACCGCTACACTTGCCAGCGCCCTAGCGCCCGCTCCTTTTCGCTTTCTTCC
5377 CTTCTTTTCTCGCCACGTTTCGCCGGCTTTCCCCGTCAAGCTCTAAATCGGGGGCTC

Figure 3B (cont'd V)



5433 f1 IR Stem loop B
CCTTTAGGGTTCGATTAGTGCTTTACGGCACCTCGACCCCAAAAACTTGATTA

5489 Dralll Stem loop C Primer-RNA
GGGTGATGGTTCACGTAGTGGGCCATCGCCCTGATAGACGGTTTTTCGCCCTTTGA

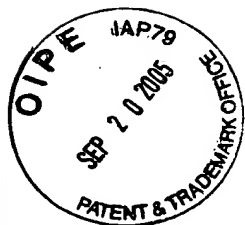
5545 Start Transcription
VS-Synthese Nicking site Stem loop D Stem loop E
CGTTGGAGTCCACGTTCTTTAATAGTGGACTCTTGTTCCAACTGGAACAACACTC

5601 AACCTATCTCGGTCTATTCTTTGATTTATAAGGGATTTTGCCGATTTCGGCCTA

5657 Apol Apol Sspl
TTGGTTAAAAAATGAGCTGATTTAACAAAAATTTAACGCGAATTTTAACAAAATAT

5713 TAACGCTTACAATTTAC

Figure 3B (cont'd VI)



f1 IR Stem loop B
5433 CCTTTAGGGTTCCGATTTAGTGCTTTACGGCACCTCGACCCCAAAAACTTGATTA

Dralll Stem loop C Primer-RNA
5489 GGGTGATGGTTCACGTAGTGGGCCATCGCCCTGATAGACGGTTTTTCGCCCTTTGA

Start Transcription
VS-Synthese Nicking site Stem loop D Stem loop E
5545 CGTTGGAGTCCACGTTCTTTAATAGTGGACTCTTGTTCCAACTGGAACAACACTC

5601 AACCTATCTCGGTCTATTCTTTTGATTTATAAGGGATTTTGCCGATTTCGGCCTA

 Apol Apol Sspl
5657 TTGGTTAAAAAATGAGCTGATTTAACAAAAATTTAACGCGAATTTTAACAAAATAT

5713 TAACGCTTACAATTTAC

Figure 3B (cont'd VI)